



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/966,121	09/28/2001	J. G. Walacavage	200-0667	4437

7590 05/07/2007
Daniel H. Bliss
Bliss McGlynn P.C.
Suite 600
2075 West Big Beaver Road
Troy, MI 48084

EXAMINER

GEBRESILASSIE, KIBROM K

ART UNIT	PAPER NUMBER
----------	--------------

2128

MAIL DATE	DELIVERY MODE
-----------	---------------

05/07/2007

PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

**Advisory Action
Before the Filing of an Appeal Brief**

Application No.

09/966,121

Applicant(s)

WALACAVAGE ET AL.

Examiner

Kibrom K. Gebresilassie

Art Unit

2128

--The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

THE REPLY FILED 19 April 2007 FAILS TO PLACE THIS APPLICATION IN CONDITION FOR ALLOWANCE.

1. ☒ The reply was filed after a final rejection, but prior to or on the same day as filing a Notice of Appeal. To avoid abandonment of this application, applicant must timely file one of the following replies: (1) an amendment, affidavit, or other evidence, which places the application in condition for allowance; (2) a Notice of Appeal (with appeal fee) in compliance with 37 CFR 41.31; or (3) a Request for Continued Examination (RCE) in compliance with 37 CFR 1.114. The reply must be filed within one of the following time periods:

- a) ☐ The period for reply expires _____ months from the mailing date of the final rejection.
b) ☒ The period for reply expires on: (1) the mailing date of this Advisory Action, or (2) the date set forth in the final rejection, whichever is later. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of the final rejection.

Examiner Note: If box 1 is checked, check either box (a) or (b). ONLY CHECK BOX (b) WHEN THE FIRST REPLY WAS FILED WITHIN TWO MONTHS OF THE FINAL REJECTION. See MPEP 706.07(f).

Extensions of time may be obtained under 37 CFR 1.136(a). The date on which the petition under 37 CFR 1.136(a) and the appropriate extension fee have been filed is the date for purposes of determining the period of extension and the corresponding amount of the fee. The appropriate extension fee under 37 CFR 1.17(a) is calculated from: (1) the expiration date of the shortened statutory period for reply originally set in the final Office action; or (2) as set forth in (b) above, if checked. Any reply received by the Office later than three months after the mailing date of the final rejection; even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

NOTICE OF APPEAL

2. ☐ The Notice of Appeal was filed on _____. A brief in compliance with 37 CFR 41.37 must be filed within two months of the date of filing the Notice of Appeal (37 CFR 41.37(a)), or any extension thereof (37 CFR 41.37(e)), to avoid dismissal of the appeal. Since a Notice of Appeal has been filed, any reply must be filed within the time period set forth in 37 CFR 41.37(a).

AMENDMENTS

3. ☐ The proposed amendment(s) filed after a final rejection, but prior to the date of filing a brief, will not be entered because
(a) ☐ They raise new issues that would require further consideration and/or search (see NOTE below);
(b) ☐ They raise the issue of new matter (see NOTE below);
(c) ☐ They are not deemed to place the application in better form for appeal by materially reducing or simplifying the issues for appeal; and/or
(d) ☐ They present additional claims without canceling a corresponding number of finally rejected claims.

NOTE: _____. (See 37 CFR 1.116 and 41.33(a)).

4. ☐ The amendments are not in compliance with 37 CFR 1.121. See attached Notice of Non-Compliant Amendment (PTOL-324).
5. ☐ Applicant's reply has overcome the following rejection(s): _____.
6. ☐ Newly proposed or amended claim(s) _____ would be allowable if submitted in a separate, timely filed amendment canceling the non-allowable claim(s).
7. ☐ For purposes of appeal, the proposed amendment(s): a) ☐ will not be entered, or b) ☐ will be entered and an explanation of how the new or amended claims would be rejected is provided below or appended.
The status of the claim(s) is (or will be) as follows:
Claim(s) allowed: _____.
Claim(s) objected to: _____.
Claim(s) rejected: _____.
Claim(s) withdrawn from consideration: _____.

AFFIDAVIT OR OTHER EVIDENCE

8. ☐ The affidavit or other evidence filed after a final action, but before or on the date of filing a Notice of Appeal will not be entered because applicant failed to provide a showing of good and sufficient reasons why the affidavit or other evidence is necessary and was not earlier presented. See 37 CFR 1.116(e).
9. ☐ The affidavit or other evidence filed after the date of filing a Notice of Appeal, but prior to the date of filing a brief, will not be entered because the affidavit or other evidence failed to overcome all rejections under appeal and/or appellant fails to provide a showing of good and sufficient reasons why it is necessary and was not earlier presented. See 37 CFR 41.33(d)(1).
10. ☐ The affidavit or other evidence is entered. An explanation of the status of the claims after entry is below or attached.

REQUEST FOR RECONSIDERATION/OTHER

11. ☒ The request for reconsideration has been considered but does NOT place the application in condition for allowance because:

See Continuation.

12. ☐ Note the attached Information Disclosure Statement(s). (PTO/SB/08) Paper No(s). _____.
13. ☐ Other: _____.


KAMINI SHAH
Supervisory Patent Examiner

Art Unit: 2128

Advisory Action

Response to Arguments

Applicant's arguments filed April 19, 2007 have been fully considered but they are not persuasive.

a. Applicants argued that:

code in the PLC. Kanai et al. does not disclose the steps of generating transformational arrays for a mechanical model by incrementally recording one position of each piece of geometry of the mechanical model moved through space over a period of time using a computer and viewing motion of the mechanical model in a motion viewer based on the transformation arrays using the computer.

In light of the specification,

machinery for the mechanical model. The transformational arrays are movies of manipulation of individual components in the mechanical model and are generated with the mechanical tool design system 16. These transformational arrays are then , which interpreted as *series of snapshots as shown in Fig. 9.*

The prior art of reference discloses:

As a result of co-simulation, the model of components in the VRML viewer (Community-Place Browser) can be dynamically moved according to the control code in the PLC. The series of snapshots during the co-simulation on the VRML viewer is shown in Figure 9.

b. Applicants argued that:

code in the PLC. Kanai et al. does not disclose the steps of generating transformational arrays for a mechanical model by incrementally recording one position of each piece of geometry of the mechanical model moved through space over a period of time using a computer and viewing motion of the mechanical model in a motion viewer based on the transformation arrays using the computer.

In response to applicant's arguments against the references individually, one cannot show nonobviousness by attacking references individually where the rejections are based on combinations of

Art Unit: 2128

references. See *In re Keller*, 642 F.2d 413, 208 USPQ 871 (CCPA 1981); *In re Merck & Co.*, 800 F.2d 1091, 231 USPQ 375 (Fed. Cir. 1986).

The prior art of reference (Kanai et al) teaches:

As a result of co-simulation, the model of components in the VRML viewer (Community-Place Browser) can be dynamically moved according to the control code in the PLC. The series of snapshots during the co-simulation on the VRML viewer is shown in Figure 9.

However, Kanai is silent *incrementally recording one position of each piece of geometry of the mechanical model moved through space over a period of time.*

The prior art of reference (Rohrer et al) discloses:

Vehicle states are tracked during the entire model run, and reports are generated automatically. Reports can be sorted alphabetically or numerically for easier analysis. The user can also develop and generate custom reports from within process procedures.

, which is analogous to the claimed

invention.

It would have been obvious to one of ordinary skill in the art at the time of the invention was made to combine the teachings of Rohrer et al with Kanai et al because both references are clearly concerned with manufacturing and component handling systems. The motivation for doing so would have been convenient to track the vehicle (i.e. mechanical model) movement during the entire model run, as taught by Rohrer et al, to the system of Kanai et al to observe motion sequence and signal change and verify the effectiveness of the proposed modeling and implementation method.

c. Applicants argued that:

code in the PLC. Kanai et al. does not disclose the steps of generating transformational arrays for a mechanical model by incrementally recording one position of each piece of geometry of the mechanical model moved through space over a period of time using a computer and viewing motion of the mechanical model in a motion viewer based on the transformation arrays using the computer.

Art Unit: 2128

In response the prior art of reference teaches:

- 5) Input and output signals of the real PLC are connected to the VRML viewer. Co-simulation is executed by sending and receiving the I/O signals between the PLC and the viewer. The programmer can visually check whether the every components in the equipment are working right.

As a result of co-simulation, the model of components in the VRML viewer (Community-Place Browser) can be dynamically moved according to the control code in the PLC.

d. Applicants argued that:

computer. Kanai et al. also does not disclose the steps of using the accepted motion of the mechanical model to compare the behavior of the PLC code relative to the accepted motion by playing the PLC code with a PLC emulator.

The prior art of reference (Kanai et al) teaches:

- 5) Input and output signals of the real PLC are connected to the VRML viewer. Co-simulation is executed by sending and receiving the I/O signals between the PLC and the viewer. The programmer can visually check whether the every components in the equipment are working right.

Art Unit: 2128

e. Applicants argued that:

The United States Court of Appeals for the Federal Circuit (CAFC) has stated in determining the propriety of a rejection under 35 U.S.C. § 103, it is well settled that the obviousness of an invention cannot be established by combining the teachings of the prior art absent some teaching, suggestion or incentive supporting the combination. See In re Fine, 837 F.2d 1071, 5 U.S.P.Q.2d 1596 (Fed. Cir. 1988); Ashland Oil, Inc. v. Delta Resins & Refractories, Inc., 776 F.2d 281, 227 U.S.P.Q. 657 (Fed. Cir. 1985); ACS Hospital Systems, Inc. v. Montefiore Hospital, 732 F.2d 1572, 221 U.S.P.Q. 929 (Fed. Cir. 1984). The law followed by our court of review and the Board of Patent Appeals and Interferences is that "[a] prima facie case of obviousness is established when the teachings from the prior art itself would appear to have suggested the claimed subject matter to a person of ordinary skill in the art." In re Rinehart, 531 F.2d 1048, 1051, 189 U.S.P.Q. 143, 147 (C.C.P.A. 1976). See also In re Lalu, 747 F.2d 703, 705, 223 U.S.P.Q. 1257, 1258 (Fed. Cir. 1984) ("In determining whether a case of prima facie obviousness exists, it is necessary to ascertain whether the prior art teachings would appear to be sufficient to one of ordinary skill in the art to suggest making the claimed substitution or other modification.")

In response to applicant's argument, the test for obviousness is not whether the features of a secondary reference may be bodily incorporated into the structure of the primary reference; nor is it that the claimed invention must be expressly suggested in any one or all of the references. Rather, the test is what the combined teachings of the references would have suggested to those of ordinary skill in the art. See In re Keller, 642 F.2d 413, 208 USPQ 871 (CCPA 1981).

f. Applicants argued that:

mechanical model is acceptable. In Kanai et al., during, co-simulation, there is a series of

Art Unit: 2128

snapshots on the VRML viewer, however, there are no transformational arrays for the mechanical model that are generated by incrementally recording one position of each piece of geometry of the mechanical model moved through space over a period of time prior to the co-simulation on the VRML viewer to determine if the motion of the mechanical model is acceptable. The snapshots and transformational arrays are not analogous and the Examiner has misinterpreted the Kanai et al. reference.

[See: response to arguments b above].

g. Applicants argued that:

Kanai et al. also lacks the steps of using the accepted motion of the mechanical model to compare the behavior of the PLC code relative to the accepted motion by playing the PLC code with a PLC emulator. In Kanai et al., there is no PLC emulator to play the PLC code such that the user can observe the motion of the mechanical model using the actual PLC code as if they were watching a machine or manufacturing line of a vehicle assembly plant floor as claimed by Applicants.

The prior art of reference (Kanai et al) teaches:

- 5) Input and output signals of the real PLC are connected to the VRML viewer. Co-simulation is executed by sending and receiving the I/O signals between the PLC and the viewer. The programmer can visually check whether the every components in the equipment are working right.

h. Applicants argued that:

Kanai et al. also lacks the steps of using the accepted motion of the mechanical model to compare the behavior of the PLC code relative to the accepted motion by playing the PLC code with a PLC emulator. In Kanai et al., there is no PLC emulator to play the PLC code such that the user can observe the motion of the mechanical model using the actual PLC code as if they were watching a machine or manufacturing line of a vehicle assembly plant floor as claimed by Applicants

In light of the specification, a PLC emulator is:

Art Unit: 2128

the plant floor. The user 12 exports the PLC code to the PLC emulator 20 to play and visualize the PLC code. By playing

which is functionally equivalent to the VRML viewer.

The prior art of reference (Kanai et al) teaches:

- 6) 3D geometry of the components, their motion behaviors corresponding to the state transition of the component can be easily defined by adding the several standard nodes of VRML in the code.
 - 7) Inexpensive VRML viewer can be used for the visual verification of the co-simulation.
2. Examiner finds applicants argument unpersuasive and the rejection is maintained.

Communications

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Kibrom K. Gebresilassie whose telephone number is 571-272-8571. The examiner can normally be reached on 8:00 am - 4:30 pm Monday to Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Kamini Shah can be reached on 571-272-2279. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

KG


KAMINI SHAH
SUPERVISORY PATENT EXAMINER